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from marks made by himself, on the piles of the wharf, the lake is fifteen inches higher than in July, 1875. It is to be hoped that the U. S. geologists will measure the oscillations of the lake.

GEOGRAPHICAL NEWS.—The *Geographical Magazine* for June contains a map of the seat of war in Asia, which is intended to assist its readers in following the military operations now being carried on in Asia. The editor observes that it possesses but few claims to accuracy, for of the countries delineated only a small portion has been made known to us through the surveys of Russian officers and of other Europeans, some of them in the service of Turkey.

Corea having entered into a treaty with Japan, there are prospects that this last of exclusive nations in the far East will have intercourse with other countries. A general account of Corea is given in the *Geographical Magazine*. A new map of Japan has been compiled by R. H. Brunton, formerly engineer-in-chief of the Japanese Light-House Department. It is said to be the only map of Japan which can be consulted with confidence. It is published by Trübner & Co., London. The Darien Exploring Expedition, under command of M. Lucien N. B. Wyse, returned to Panama early in April. M. Wyse has expressed his conviction, based on the results of these surveys, that the inter-oceanic canal will soon be made through Columbia. The proposed canal will have a length of 143 miles, including 46 miles of the Atrato and 43 of the Tuyra, which can be rendered navigable at small expense. At the confluence of Tuyra and Pucro the elevation above the sea is 92 feet, and it appears from a reconnaissance that the height of the water parting at the head of the Tihule does not exceed 230 feet. The late Dr. Maack, who was attached to the American Expedition as geologist, ascertained that the two oceans formerly communicated near this spot. The fossils discovered belonged to species still existing in the two oceans. The engineers would, therefore, only have to break through this barrier, which has been formed by an upheaval of the tertiary strata.

At the meeting of the Berlin Geographical Society, held May 12th, Baron Richthofen read a paper on the roads followed by the silk trade, according to Ptolemy and the Chinese authorities. It was announced at this meeting that Dr. Nachtigal proposed to start for Western Africa next year. In the mean time, it is proposed to dispatch a pioneer explorer to follow in the footsteps of Pogge and Mohr.

MICROSCOPY.¹

ANOTHER MECHANICAL FINGER.—Mr. Hanks, of San Francisco, Cal., at a recent meeting of the San Francisco Microscopical Society described a device used by him for picking up objects under the microscope, which answers nearly all the purposes of the most elaborate mechanical finger, and at the same time requires no extra apparatus. For the

¹ Conducted by DR. R. H. WARD, Troy, N. Y.

purpose of lifting the object slide, when required, off the stage, the glass parabola is mounted in the substage in such a position that it can be raised by the substage rack until its upper surface is just above the level of the stage. The stand is arranged vertically, and a hair is placed in the stage forceps. For small objects a human hair is sufficient, but for larger ones a bristle is required, and it may even need to be slightly moistened when used, the object adhering while it is wet and falling off readily as it dries. If the hair is not easily held by the forceps, one end of it may be cemented between two small pieces of thick paper which are easily held. The slide containing the rough material is laid on the stage and the desired object selected and accurately centred; it is now, by the rack or sliding movement of the substage, lifted off the stage so as to be no longer affected by the stage movements. The end of the hair is next arranged just above the level of the object and centred exactly over it by means of the stage movements. Having got the end of the hair in the centre of the field, and having placed the object, dimly seen out of focus, below it, a slight elevation of the substage, which is still supporting the slide, will bring the object in contact with the hair and leave it there when the slide is lowered again. A fresh slide can then be substituted and brought up to the object on the hair, the exact position where it shall touch being secured by the stage movements, if the substage has no centring adjustments. Where the substage has rotating and centring movements of its own the performance is most complete and accurate.

It will be noticed that the principle of this method is the same as that of Dr. G. C. Morris,¹ the novelty consisting in the excellent suggestion of carrying the hair on the stage forceps instead of on a special arm clamped to the stage.

NEW PHYSICIAN'S MICROSCOPE. — For convenience of those who prefer a stand of the compact, Continental model, the Bausch & Lomb Optical Company, of Rochester, have designed a new form of instrument which they call the physician's microscope. In this stand Mr. Gundlach has reproduced the Continental model so well worked out by him while in Europe, with several of the novel features of the Rochester styles, such as his new fine adjustment, the hard-rubber stage and mountings, and the new students' series of objectives.

TIN CELLS. — Prof. George F. Markoe, of 61 Warren Street, Boston, Mass., has had a set of dies prepared with which he is now able to produce tin cells of various sizes and excellent quality. Microscopists can obtain these serviceable cells from him, by mail or otherwise, at a reasonable cost.

EXCHANGES. — Diatoms from coörongite, from South Australia, for good mounted objects. Address Galloway C. Morris, East Tulpehocken Street, Germantown, Philadelphia.

Shell sand from the Bermuda Islands, for any really valuable mate-

¹ See Arranging Diatoms, in the *NATURALIST* for August, 1876, p. 502.

rial; or selected shells from the same, for mountings of special interest. Address C. C. Merriman, Rochester, N. Y.

Insects' eggs; also American podura. Whole insects or scales. Address George W. Frees, Friendship, N. Y.

Algæ from California and Japan, on which are fine circular diatoms. Address W. C. J. Hall, Jamestown, N. Y.

Scales of hunting spider, *Salicis senicus*. Address William Readio, Garnerville, Rockland County, N. Y.

Öölitic sand from Salt Lake. Address F. H. Atwood, 160 Lasalle Street, Chicago, Ill.

Lupulin crystals in extract of hops. Address Richard Allen, 146 North Fourth Street, Troy, N. Y.

Diatoms from Keene, N. H. Address Edwin S. Gregory, Youngstown, Ohio.

Diatoms from Lake Superior; dredgings eight feet deep near the head of Portage Lake. Address Dr. T. U. Flanner, Springfield, Mo.

A variety of mounted objects for exchange. Address offers to Frederick A. Eddy, 89 State Street, Bangor, Me.

SCIENTIFIC NEWS.

— Dr. Joseph D. Hooker, keeper of the Kew Botanical Gardens, England, and Professor Asa Gray, of Cambridge, are both temporarily attached to the U. S. Geological and Geographical Survey of the Territories, Dr. F. V. Hayden, U. S. Geologist, in charge. In company with Dr. Hayden they have visited various portions of Colorado, making the ascent of Gray's Peak, and exploring the interesting flora of the mountains and parks, as well as that of the foot-hills and adjacent plains. Previous to August 1st, these eminent botanists had collected nearly four hundred species of rare plants, being thus enabled to study critically in their native habitats the species they had during past years described from dried specimens brought in by expeditions. Both of these gentlemen will prepare reports on the botany of the West for the Eleventh Annual Report of Hayden's Survey. A preliminary report by Dr. Hooker is already well advanced. After a sojourn of several weeks in Colorado and Utah, they left Salt Lake City, August 11th, for the Pacific Coast.

— The Summer School of Biology at the Peabody Academy of Science, Salem, Mass., opened July 7th with twenty-one laboratory students, while a few others attend the daily lectures. This is a larger number than were present last year. Lectures have been given by Mr. J. H. Emerton, Rev. E. C. Bolles, Mr. John Robinson, Professor J. Ramsay Wright, of Toronto, Rev. T. C. Hervey, Mr. C. S. Minot, and Dr. Packard. Material for dissection from Woods Holl, Mass., has been contributed by Professor Baird, U. S. Commissioner of Fish and Fisheries.